National Aeronautics
and Space Administration
Marshall Space Flight Center

Neutral Buoyancy Simulator (NBS) Commercialization Briefing

Marshall Space Flight Center

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Larry S. Gagliano

EJ51/Technology Transfer Chief Engineer's Office

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NBS Commercialization Briefing

- **The Facility -**
  - 40’ Deep x 75’ Diameter
  - Ability to maintain constant 90 degree F water
  - 5-Console Control Room
  - 12 Video Cameras
  - Video Monitoring from Control Room
  - Capability to uplink video signal
  - Extensive Underwater Communications
  - Hyperbaric Chamber

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NBS Commercialization Briefing

- **Potential Uses**
- **Engineering and Development**
  - Space Mechanism and Tool Design
  - EVA Operations Development and Verification
  - Space and Underwater Tele-robotics Test and Verification
  - Underwater Robotics Development and Verification
  - Underwater Dive Equipment Development

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NBS Commercialization Briefing

- **Potential Uses Con't**
- **Training**
  - Hands-on Experience for Space Mechanism Design Engineers
  - Safe Training for Space and Underwater Procedures
- **Research**
  - Materials Corrosion
  - Medical and Physiological Research
- **Film and Print Industry**
  - Underwater filming (Movies, training, documentaries, etc.)

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- **Costs Involved with Operation of the NBS**

One Time Re-activation Costs

– Total One-Time Re-activation Costs	**13 K**

Annual Costs

– Utilities (Power, water, steam)	79.5 K
– Consumables (Chemicals)	6.4 K
– General Maintenance (Pumps, custodial, etc.)	21.2 K
– Brick & Mortar	33.9 K
Total Annual Costs	**141.0 K**

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Costs continued

Other Costs (per company requirements)

- Additional Office Space (Annual) $20/sq. ft.

  utilities
  janitorial service
  facility maintenance
  sanitary landfill services
  fire protection and building services
  emergency medical care*
  (* to the extent such services are available to MSFC employees)

- Initial Commercial Phone/Computer Line Install 2.0 K

  (Customer must attain phone service from outside source)

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- Small Print
  - Office Space Costs are AS IS
  - Any modifications to existing office areas will carry a fee
  - Phone/Computer line requirement changes will carry a fee
  - Anyone (customer, employee, visitor, etc.) using or working at the facility must follow Redstone Arsenal and NASA/MSFC badging and security rules